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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/017,842	10/23/2001	Claus Erdmann Furst	04590-000706	9627

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HARNESS, DICKEY & PIERCE, P.L.C.
P.O. BOX 8910
RESTON, VA 20195

EXAMINER

TAYLOR, BARRY W

ART UNIT PAPER NUMBER

2643

DATE MAILED: 12/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No.		Applicant(s)	
	10/017,842		FURST, CLAUS ERDMANN	
	Examiner		Art Unit	
	Barry W Taylor		2643	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) 16 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 and 17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 16 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 October 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>6/3/03, 10/11/02</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the “analogue-to-digital converter” as recited in dependent claims 4-5 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled “Replacement Sheet” in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Election/Restrictions

2. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-15 and 17, control module for a mobile phone, classified in class 455, subclass 550.1.
 - II. Claim 16, drawn to hearing aid, classified in class 381, subclass 312.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because invention I is directed towards radio equipment detail classified in class 455, subclass 550.1 and invention II directed towards hearing aid having classified in class 381, subclass 312. They are different searching environments.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Group II, restriction for examination purposes as indicated is proper.

3. During a telephone conversation with John A. Castellano on 12/1/04 a provisional election was made with traverse to prosecute the invention of a control module for mobile phone, claims 1-15 and 17. Affirmation of this election must be made by applicant in replying to this Office action. Claim 16 is withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 10 and 17 rejected under 35 U.S.C. 102(b) as being anticipated by Miyama et al (5,574,991 hereinafter Miyama).

Regarding claims 1, 10 and 17. Miyama teaches a control module for a mobile unit (see mobile communication transceiver in figure 5) comprising:

a plurality of user operable control members, said plurality of user operable control members being adapted to provide a plurality of user operable control signals (see figure 5 wherein a plurality of user operable control members (see lower left item 3a in figure 5) inputted to MULTIPLEXER (item 3) to produce multiplexed output control);

means for multiplexing (see MULTIPLEXER item 3 figure 5) for multiplexing a first and second control signal (see items 3a feeding MULTIPLEXER in figure 5) of the plurality of user operable control signals into a multiplexed control signal, said multiplexed control signal being available for further processing in the mobile unit so as to control a number of operation parameters of the mobile unit (see figure 5 wherein a plurality of user operable control members (see lower left item 3a in figure 5) inputted to MULTIPLEXER (item 3) to produce multiplexed output control to be used by other operation parameters, such as amplifiers, gate bias, power module, FET, etc.).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-15 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rasmusson (5,515,432) in view of Ostman et al (5,786,782 hereinafter Ostman).

Regarding claims 1, 10 and 17. Rasmusson teaches method and apparatus for volume control and intelligibility control for loudspeaker (abstract and figure 6).

Rasmusson teaches a plurality of user operable members (see control switches item 615 figure 6, col. 5 line 44 – col. 6 line 3). Rasmusson also discloses other user operable inputs may be used (see voice activated volume control command col. 5 line 61). Rasmusson discloses that the volume controls are adapted to provide a plurality of

user operable control signals (see figure 6 wherein volume control buttons 615 are passed to RECEIVE DSP (670) and in the case they are voice activated (i.e. analogue) the analogue signal must be first converted to DIGITAL before passing the signal to RECEIVE DSP (670) to further process).

Rasmusson fails to teach multiplexing volume control inputs. However, Rasmusson figure 6 discloses using separate components for combining and converting. For example, the RECEIVE DSP (670) receives two inputs: one from volume control (item 615 or analogue from voice activated which of course must be converted via voice CODEC before passing signal to RECEIVE DSP) and one from radio receive path wherein analogue from radio antenna first converted via logic (see item 650 above RECEIVE DSP in figure 6) before passing to DSP. Rasmusson figure 6 clearly shows using separate components used for the transmit path as well. For example, before signal from microphone (611 figure 6) can be transmitted via antenna (610 figure 6) it also must be first converted to digital before passing it to another DSP (see TRANSMIT DSP---612 figure 6) then converted back to analog so IQ modulator (item 613) can mix it with the analog signal from oscillator (item 640) thereby converting it to RF signal to be transmitted over-the-air.

Ostman teaches A/D and D/A converters are effectively utilized in a mobile phone (i.e. mobile unit), for example, by multiplexing the signals before the conversion (abstract, col. 1 lines 1-4) in both time and frequency domain. Ostman discloses that prior art must use a large amount of circuitry for both the transmit and receive path (col. 1 line 57 – col. 2 line 15) which is what Rasmusson figure 6 shows. Ostman inventive

concept is to use MULTIPLEXING (col. 2 lines 23-46) so that same components (i.e. use same A/D and D/A converters) may be used thereby saving on size and money. In other words, Ostman teaches using the same analog-to-digital converter, for example in a mobile phone, for converting both the speech signal from a microphone and the received signal from the radio part.

Realizing this and the fact the Rasmusson also teaches receiving user volume control signals either from (control buttons 615 or from voice activation) in conjunction with radio part information (see RECEIVE DSP 670 figure 6 wherein inputs from volume controls and antenna 610 are received). The difference being that Rasmusson requires a vast amount of circuitry, if not more in the case for voice-activated volume control commands.

Therefore, it would have been obvious for any one of ordinary skill in the art at the time of invention to modify the invention as taught by Rasmusson to use MULTIPLEXING as taught by Ostman for the benefit of reducing the number of components need for controlling the volume of mobile phone, as well as, saving money since fewer components are needed.

Regarding claim 2. Rasmusson teaches using oscillator (640 figure 6). Ostman also teaches using clock signal (col. 4 line 8).

Regarding claims 3-4. Ostman further teaches multiplexing input signals (col. 3 line 57 – col. 4 line 63).

Regarding claim 5. Rasmusson teaches analogue-to-digital converters for receiving voice activation volume control (col. 5 lines 55-63).

Regarding claim 6. Ostman teaches multiplexing in the digital domain (see figure 3a).

Regarding claim 7. Rasmusson teaches cellular phone (col. 1 lines 10-16).
Ostman teaches mobile phone (col. 1 line 11).

Regarding claim 8. Ostman teaches time domain (see first four lines of abstract).

Regarding claim 9. Ostman teaches frequency domain (see first four lines of abstract).

6. Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

(703) 872 9314,

(for informal or draft communications, please label "PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2121
Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Barry W. Taylor, telephone number (703) 305-4811, who is available Monday-Friday, 6:30am to 4pm.

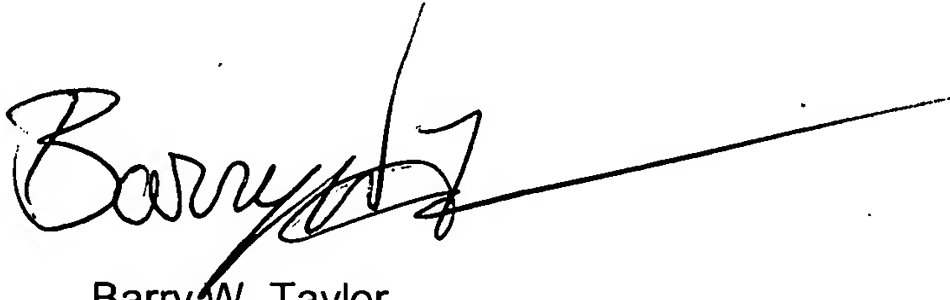
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Curtis Kuntz, can be reached at (703) 305-4708. The facsimile phone number for this group is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group 2600 receptionist whose telephone number is (703) 305-4750, the 2600 Customer Service telephone number is (703) 306-0377.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For

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more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read "Barry W. Taylor", with a long horizontal line extending from the end of the signature.

Barry W. Taylor
Patent Examiner
Technology Center 2600
Art Unit 2643